

REMARKS

The present Amendment is in response to the Office Action having a mailing date of December 31, 2003. Claims 1-21 are pending in the present Application. Applicant has amended the specification. Consequently, claims 1-21 remain pending in the present Application.

This application is under Final Rejection. Applicant has presented arguments hereinbelow that Applicant believes should render the claims allowable. In the event, however, that the Examiner is not persuaded by Applicant's arguments, Applicant respectfully requests that the Examiner enter the Amendment to clarify issues upon appeal.

Applicant has changed the title of the application to more clearly reflect the invention recited in claims 1-21. In particular, Applicant has changed the title to "Method and System for Utilizing a Generic Scalar Function to Allow a Column Function to Operate on Row Data." Applicant respectfully submits that the change in the title does not add new matter.

In the above-identified Office Action, the Examiner objected to the specification under 37 C.F.R. 1.71 as failing to provide an adequate description of the invention. The Examiner also rejected claims 1-21 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not disclosed in the specification in such a manner as to allow one of ordinary skill in the art to make and/or use the invention. The Examiner also rejected claims 1-21 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter that the Applicant regards as the invention. The Examiner also rejected claims 1-21 under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,289,336 (Melton).

In the above-identified Office Action, the Examiner objected to the specification under 37 C.F.R. 1.71 as failing to provide an adequate description of the invention. In particular, the Examiner indicated that

[i]t appears that applicants has [sic] attempted to incorporate some generalized scalar function and conventional column function into their specification to thereby support claims to any combination or permutation of the features therefrom. The fact that features are mentioned individually does not mean that applicants have invented anything. There must be some evidence within the application filed that applicants were in possession of the claimed combination. Incorporation by reference of a dictionary does not constitute disclosure of a novel which uses only words from that dictionary.

Similarly, without more, the stand alone generalized scalar function and conventional column function do not provide support for combining any features, regardless of what applicants may teach.

To be effective in showing possession of the invention, an incorporation of the structures, links and mechanism derived from the generalized function to simulate the conventional column function environment which specifically contribute to the claimed features and for what purpose should be disclosed.

Applicant respectfully traverses the Examiner's objection. Applicant respectfully submits that the description of the generalized scalar function, the column function, and their relationship are adequately disclosed in the specification. The specification states that the generalized scalar function is used in conjunction with a column function that is a conventional column function. Specification, page 8, lines 4-5. Thus, the column function that is used is one already in existence in conventional systems. See, for example, Specification, page 2, line 4-page 3, line 12. The column function is a pre-existing, or conventional, column function that is already available to a user of the present invention. Thus, nothing new or different is done to the column function. Instead, the embodiments of the method and system described in the specification illustrate a new use for a conventional column function: row data. The generalized scalar function facilitates this new use as described in the specification and below. Applicant respectfully submits, therefore, that based on a reading of the specification, one of ordinary skill in the art would understand the term column function, would understand that the inventors have possession of the column portion of the claimed invention, and would be capable of using the (pre-existing) column function in the manner recited in the claims and described in the specification.

As described in the specification, the generalized scalar function makes the row(s) that are the arguments for the generalized scalar function appear as columns. Specification, page 8, lines 10-13. In so doing, the generalized scalar function allows the conventional column function to operate on row data. The generalized scalar function thus provides the entries in the row(s) to a corresponding column function such that the column function can use the data in performing its normal functions. Stated differently, the generalized scalar function provides the data from the row(s) to the corresponding column function so that each row appears to the column function as a column. For example, as stated in the Declaration provided with the previous Amendment, and as is stated in the specification, the generalized scalar function might provide the data in a row entry-by-entry to the column function. Applicant respectfully submits that one of ordinary skill in the art would readily recognize that providing the data entry-by-entry to the column function is only one of (and probably one of the easier) methods for providing the row data to the column function so that the row appears to be a column. The column function accepts the data and then operates normally. Specification, page 2, lines 21-23. The use of the generalized scalar function allows row data to be treated in a similar manner to column data. In particular, the combination of the generalized scalar function and a particular column function allows the functions of the particular column function to be performed on row(s) without writing a specialized row function that performs analogous functions to the column function. Specification, page 9, lines 1-6. Applicant respectfully submits, therefore, that one of ordinary skill in the art would understand how a generalized scalar function and the column function operate together.

Thus, the specification already states that the function of the generalized scalar function provides row data to the column function in a manner that allows the column function to treat the row data as a column. Furthermore, Applicant notes that the generalized scalar function is termed a

“scalar” function because the generalized scalar function because the number of arguments is determined at the time the generalized scalar function is written. Specification, page 8, lines 7-9. Applicant respectfully submits that the generalized scalar function is “generalized” in that it need not be restricted to a particular column function. As discussed above, the column function is also defined to be a pre-existing, conventional column function that functions in a conventional manner. Consequently, upon reading the specification and thus knowing the function of the generalized scalar function, one of ordinary skill in the art would understand the term generalized scalar function, would understand how the generalized scalar function operates with the column function, would understand that the inventors have possession of the column portion of the claimed invention, and would be capable of making and/or using the generalized scalar function in conjunction with the column function in the manner recited in the claims.

Thus, for the above reasons, Applicant respectfully submits that Applicants are in possession of the claimed invention. Consequently, Applicant respectfully submits that the Examiner’s objection under 27 C.F.R. 1.71 has been addressed.

In the above-identified Office Action, the Examiner also rejected claims 1-21 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not disclosed in the specification in such a manner as to allow one of ordinary skill in the art to make and/or use the invention. In particular, the Examiner indicated that as to independent claims 1, 8, and 15, “applicants fail to disclose the simulation mechanism and the corresponding data structures, for simulating the claimed scalar function with row parameter into conventional column parameter environment. Particularly, the submitted specification fails to show the form of the generalized scalar function.”

Applicant respectfully disagrees with the Examiner’s rejection. Claim 1 recites:

1. A method for utilizing a column function for a relational database in a structure query language (SQL) environment, the column function capable of performing an operation on an indeterminate number of entries, the relational database utilizing data including a plurality of entries being organized into at least one column and at least one row, the method comprising the steps of:

- (a) allowing a user to specify the at least one row as an argument for a generalized scalar function;
- (b) simulating a column environment for the at least one row using the generalized scalar function to allow the at least one row to be provided to the column function as though the at least one row was a column; and
- (c) performing the column function on the at least one row to provide at least one output.

Similarly, claim 8 recites:

8. A computer-readable medium containing a program for utilizing a column function for a relational database in a structure query language (SQL) environment, the column function capable of performing an operation on an indeterminate number of entries, the relational database utilizing data including a plurality of entries being organized into at least one column and at least one row, the program including instructions for:

- (a) allowing a user to specify the at least one row as an argument for a generalized scalar function;
- (b) simulating a column environment for the at least one row using the generalized scalar function to allow the at least one row to be provided to the column function as though the at least one row was a column; and
- (c) performing the column function on the at least one row to provide at least one output.

Claim 15 recites:

15. A system for utilizing a column function for a relational database in a structure query language (SQL) environment, the relational database utilizing data including a plurality of entries being organized into at least one column and at least one row, the system comprising:

a column function capable of performing an operation on an indeterminate number of entries;

a generalized scalar function for simulating a column environment for the at least one row using the generalized scalar function to allow the at least one row to be provided to the column function as though the at least one row was a column such that the column function can perform an operation the at least one row to provide at least one output;

an interface for allowing a user to specify the at least one row as an argument for the generalized scalar function.

Thus, as recited in claim 1, 8, and 15, a generalized scalar function and a (conventional) column function are used together. The generalized scalar function, therefore, provides the data in the row to the column function so that the column function can use the data. Thus, as recited in claim 16, the generalized scalar function may fetch a row of the at least one row and provides the row to the column function as though the row was a column. For example, as discussed in the Declaration, the data in the row may simply be provided to the column function entry-by-entry. There might, however, be another method for simulating the column environment. Further, for the reasons described above, Applicant respectfully submits that one of ordinary skill in the art would recognize how to call the conventional column function with which the generalized scalar function is used. For the reasons discussed above, one of ordinary skill in the art would also recognize how to provide the data from the row to the column function. Moreover, for the reasons discussed above, issues such as differing data attributes could be addressed by one of ordinary skill in the art without additional disclosure by Applicant. Consequently, Applicant respectfully submits that one of ordinary skill in the art will readily understand how to make and/or use the invention recited in claims 1, 8, and 15 and, therefore, claims 2-7, 9-14 and 16-21. Accordingly, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. § 112, first paragraph has been addressed.

In the above-identified Office Action, the Examiner also rejected claims 1-21 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter that the Applicant regards as the invention. In particular, the Examiner rejected claims 1, 8, and 15 because "it is unknown what the structure of the generalized scalar function?" With respect to claims 6, 13, and 20, the Examiner the Examiner stated "it is unsure what was initialized to the claimed first entry? What was evaluated on each entry of the claimed at least one

row? What was finalized after the evaluation of the 1st entry of the at least one row? What is the purpose to perform the claimed initialization, evaluation, and finalization phases?"

With respect to claims 1, 8, and 15, Applicant respectfully refers the Examiner to the discussion above. As discussed above, a generalized scalar function is generalized because it can be used with different column functions and is a scalar function because the number or arguments are generally known. Moreover, the function of the generalized scalar function is to provide row data to the column function as though the row was a column. Further, as discussed above, Applicant respectfully submits that the operation of the generalized scalar function described in the Declaration, providing data from the row entry-by-entry to the column function, would be understood by one of ordinary skill in the art given the description of the function of the generalized scalar function in the specification. Thus, Applicant respectfully submits that no further description of the structure of the generalized scalar function is required. Instead, based upon the disclosure in the specification, and the recitation in the claims, one of ordinary skill in the art would understand the generalized scalar function. Consequently, Applicant respectfully submits that one of ordinary skill in the art would understand the terms in claims 1, 18, and 15, including the recited generalized scalar function. Accordingly, Applicant respectfully submits that claims 1, 8, and 15 are clear and definite.

With respect to claims 6, 13, and 20, Applicant respectfully draws the Examiner's attention to page 9, line 18-page 10, line 6 of the specification, which describes these phases. The phases recited in claim 6, 13, and 20 and described in the above portion of the specification are all part of the conventional column function. These phases are, therefore, conventional. Consequently, Applicant respectfully submits that one of ordinary skill in the art would understand that the exact operations carried out in these phases are specific to the particular column function used. For

example when the column function determines a minimum of the data input, the evaluation phase may be similar to but different from when the column function determines the maximum of the data input. Applicant also respectfully submits that one of ordinary skill in the art would understand the operation of the conventional column function and, therefore, the initialization, evaluation, and finalization phases for the particular column function being used. Thus, Applicant respectfully submits that claims 6, 13, and 20 are clear and definite. Accordingly, Applicant respectfully submits that claims 1-21 are clear and definite.

The Examiner also rejected claims 1-21 under 35 U.S.C. § 102 as being anticipated by Melton.

Applicant respectfully disagrees with the Examiner's rejection. Claim 1 recites a method for utilizing a column function for a relational database in a structure query language (SQL) environment. Claim 1, reproduced above, recites the steps of allowing a user to specify the at least one row as an argument for a generalized scalar function. The generalized scalar function is used to simulate a column environment for the row(s). More specifically, claim 1 recites that the generalized scalar function is used "to allow the at least one row to be provided to the column function as though the at least one row was a column." The column function can thus performed for data in the at least one row, which now mimics a column. Consequently, at least one output for the row data is provided by the column function. Claims 8 and 15 recite analogous computer-readable medium and system claims.

Thus, using the method, computer-readable medium and system recited in claims 1, 8, and 15, respectively, the pre-existing column function can be reused to work on row data. As a result, the resources that would be used in rewriting, testing, and debugging a row function that

performs the operations of the column function are saved. Specification, page 9, lines 1-6; page 10, lines 9-13.

In contrast, the cited portions Melton fails to teach or suggest the use of the recited generalized scalar function in conjunction with a (pre-existing, conventional) column function. Instead, the cited portions of Melton describe a specific set of row functions that are written. For example, cited portions of Melton describe row functions that are written to search previously accessed rows or offsets. Melton, col. 2, lines 10-45. Stated differently, the functions described in the cited portion of Melton are for rows, not columns, and to perform specific operations on these rows. Applicant can find no indication in the cited portions of Melton that the functions of Melton are used in conjunction with pre-existing column functions. The cited portions of Melton are also devoid of mention of utilizing a generalized scalar function to simulate a column environment so that the row data appears to the column function as a column. For example, the cited portion of Melton also does not describe fetching a row and providing the row data to the column function as if the row was a client. Thus, the cited portions of Melton fails to teach or suggest using a generalized scalar function to allow the row(s) to be provided to the column function as though the at least one row was a column in conjunction with a column function that performs its operation in a conventional manner. Consequently, the cited portions of Melton fail to teach or suggest the method, computer-readable medium and system recited in claims 1, 8, and 15. Accordingly, Applicant respectfully submits that claims 1, 8, and 15 are allowable over the cited references.

Claims 2-7, 9-14 and 16-21 depend upon independent claims 1, 8, and 15, respectively. Consequently, the arguments herein apply with full force to claims 2-7, 9-14, and 16-21.

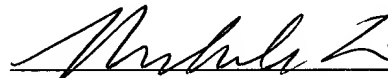
Accordingly, Applicant respectfully submits that claims 2-7, 9-14, and 16-21 are allowable over the cited references.

Applicant's attorney believes that this application is in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,

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